

=====

Sequence Listing could not be accepted due to errors.

See attached Validation Report.

If you need help call the Patent Electronic Business Center at (866) 217-9197 (toll free).

Reviewer: Anne Corrigan

Timestamp: [year=2011; month=4; day=22; hr=9; min=53; sec=48; ms=413;]

=====

Reviewer Comments:

<120> Method for detecting LDL receptor gene mutations associated with

Please complete the above "<120>" response: "Method for detecting LDL receptor gene mutations associated with Familial Hypercholesterolemia"

(Sequence 1 has many errors. Errors shown below)

<220>

<221> gene

<223> n at position 35360 represents aau, aac or aat

<220>

<221> gene

<223> n at position 35361 represents aau, aac or aat

Errors above: a single "n" can only represent a single nucleotide, not a codon.

cctctgcctc ctgggttcaa gcgattttcc tgctcagcc tcccgagtag ctgggattac 8160
aggtgcttgc caccataccc ggctaatttt gtatttttag tagagacggg gttacgcca 8820

The "8820" above is incorrect: the cumulative nucleotide total should be "8220". Please check all succeeding cumulative nucleotide totals in Sequence 1 for accuracy: mistakes have been noted.

actgcctggc agaggctgcg agc atg ggg ccc tgg ggc tgg aaa ttg cgc 15350

Met Gly Pro Trp Gly Trp Lys Leu Arg

-21 -20

-15

tgg acc gtc gcc ttg ctc ctc gcc gcg gcg ggg act gca g gtaaggcttg 15400

Trp Thr Val Ala Leu Leu Leu Ala Ala Ala Gly Thr Ala
 -10 -5 -1 1

The above misaligned amino acids are samples of TAB codes appearing throughout Sequence 1: please remove all TAB codes, and align the amino acids and amino acid numbers, properly. Do not show TAB codes in the sequence listing.

Asp Ile Asp Glu Gys Gln Asp
 335

ccc gac acc tgc agc cag ctc tgc gtg aac ctg gag ggt ggc tac aag 36686

Pro Asp Thr Cys Ser Gln Leu Cys Val Asn Leu Glu Gly Gly Tyr Lys

340 345 350 355

tgc cag tgt gag gaa ggc ttc cag ctg gac ccc cac acg aag gcc tgc 36734

Cys Gln Cys Glu Glu Gly Phe Gln Leu Asp Pro His Thr Lys Ala Cys

360 365 370

aag gct gtg g gtgagcacgg gaaggcggcg ggtgggggcg gcctcacccc 36784

Lys Ala Val

375

Besides TAB codes causing misalignment, "Gys" (in the top amino acid row above) is an invalid amino acid designator.

<210> 2

<211> 24

<212> DNA

<213> artificial sequence

<220>

<223> Ex1F

Please remove the extra blank space between "Artificial" and "Sequence" in the above "<213>" response. Only one blank space should separate "Artificial" and "Sequence". Same error in many subsequent sequences.

As an explanation of "<213> Artificial Sequence", the above "<223>" response needs more information regarding the source of the genetic material. If this is a primer, please add that to the "<223>" response. Same type of response in subsequent sequences.

<210> 90

<211> 20
<212> DNA
<213> artificial sequence

<220>
<223> probe

<400> 90

cactctcggg cccctaccc 20

Although the above "<211>" response is "20", only 19 nucleotides are shown. The second group of nucleotides totals "9".

<210> 232
<211> 25
<212> DNA
<213> artificial sequence

<220>
<223> probe

<400> 232

ttgtccttgc agtcggggcc acta 25

Although the above "<211>" response totals "25", only 24 nucleotides are shown. The last group totals "4".

Suggestion: please consult the Sequence Rules for valid format.

To correct the sequence listing errors noted in this report - The recommended method for correction of errors is to access the sequence listing working file using the software program in which the listing was originally prepared, e.g., the project file in PatentIn, make any necessary corrections within that program, then generate a new sequence listing file. Use of a word processing program to correct errors directly in the original sequence listing file is strongly discouraged, since such programs often introduce unintended changes to the sequence listing, rendering the listing unacceptable. When the working file or original program is not available for correction, then use of a common

or plain text-only editor, such as NotePad, to edit the original
sequence listing file may suffice.

Application No: 10542937 Version No: 4.0

Input Set:

Output Set:

Started: 2011-04-13 11:37:43.725
Finished: 2011-04-13 11:38:01.699
Elapsed: 0 hr(s) 0 min(s) 17 sec(s) 974 ms
Total Warnings: 277
Total Errors: 414
No. of SeqIDs Defined: 259
Actual SeqID Count: 259

Error code	Error Description
E 254	The total number of bases conflicts with running total, Input: 8820, Calculated : 8220 SEQID(1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
E 254	The total number of bases conflicts with running total, Input: 18940, Calculated : 19840 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 20190, Calculated : 20200 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 22700, Calculated : 22720 SEQID(1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (61)
E 254	The total number of bases conflicts with running total, Input: 28210, Calculated : 28260 SEQID(1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
E 254	The total number of bases conflicts with running total, Input: 39861, Calculated : 30861 SEQID(1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)

Input Set:

Output Set:

Started: 2011-04-13 11:37:43.725
Finished: 2011-04-13 11:38:01.699
Elapsed: 0 hr(s) 0 min(s) 17 sec(s) 974 ms
Total Warnings: 277
Total Errors: 414
No. of SeqIDs Defined: 259
Actual SeqID Count: 259

Error code	Error Description
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (135)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (136)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (140)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (141)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (145)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (146)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (150)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (151)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (155)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (156)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (160)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (161)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (165)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (166)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (170)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (171)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (175)
E 323	Invalid/missing amino acid numbering SEQID (1) POS (176)
E 323	Invalid/missing amino acid numbering SEQID (1)at Protein (180) This error has occurred more than 20 times, will not be displayed
E 254	The total number of bases conflicts with running total, Input: 33271, Calculated : 33171 SEQID(1)
E 342	'n' position not defined found at POS: 35360 SEQID(1)

Input Set:

Output Set:

Started: 2011-04-13 11:37:43.725
Finished: 2011-04-13 11:38:01.699
Elapsed: 0 hr(s) 0 min(s) 17 sec(s) 974 ms
Total Warnings: 277
Total Errors: 414
No. of SeqIDs Defined: 259
Actual SeqID Count: 259

Error code	Error Description
E 342	'n' position not defined found at POS: 35361 SEQID(1)
W 333	tabs used in amino acid numbering SEQID (1)
E 330	Invalid protein , found in SEQID(1) POS (358)Invalid Protein:Gys
W 333	tabs used in amino acid numbering SEQID (1)
E 254	The total number of bases conflicts with running total, Input: 37984, Calculated : 37983 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38044, Calculated : 38043 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38104, Calculated : 38103 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38164, Calculated : 38163 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38224, Calculated : 38223 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38284, Calculated : 38283 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38344, Calculated : 38343 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38399, Calculated : 38398 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38447, Calculated : 38446 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38495, Calculated : 38494 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38543, Calculated : 38542 SEQID(1)
E 254	The total number of bases conflicts with running total, Input: 38594, Calculated : 38593 SEQID(1)
E 254	The total number of bases conflicts with running total, Input:

Input Set:

Output Set:

Started: 2011-04-13 11:37:43.725
Finished: 2011-04-13 11:38:01.699
Elapsed: 0 hr(s) 0 min(s) 17 sec(s) 974 ms
Total Warnings: 277
Total Errors: 414
No. of SeqIDs Defined: 259
Actual SeqID Count: 259

Error code	Error Description
	This error has occurred more than 20 times, will not be displayed
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 333	tabs used in amino acid numbering SEQID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 402	Undefined organism found in <213> in SEQ ID (9)
W 402	Undefined organism found in <213> in SEQ ID (10)
W 402	Undefined organism found in <213> in SEQ ID (11)
W 402	Undefined organism found in <213> in SEQ ID (12)
W 402	Undefined organism found in <213> in SEQ ID (13)
W 402	Undefined organism found in <213> in SEQ ID (14)
W 402	Undefined organism found in <213> in SEQ ID (15)

Input Set:

Output Set:

Started: 2011-04-13 11:37:43.725
Finished: 2011-04-13 11:38:01.699
Elapsed: 0 hr(s) 0 min(s) 17 sec(s) 974 ms
Total Warnings: 277
Total Errors: 414
No. of SeqIDs Defined: 259
Actual SeqID Count: 259

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (16)
W 402	Undefined organism found in <213> in SEQ ID (17)
W 402	Undefined organism found in <213> in SEQ ID (18)
W 402	Undefined organism found in <213> in SEQ ID (19)
W 402	Undefined organism found in <213> in SEQ ID (20)
W 402	Undefined organism found in <213> in SEQ ID (21) This error has occurred more than 20 times, will not be displayed
E 253	The number of bases differs from <211> Input: 20 Calculated:19
E 253	The number of bases differs from <211> Input: 25 Calculated:24

SEQUENCE LISTING

<110> Mata Lopez, Pedro
 Mozas Alonso, Pilar
 Pocovi Mieras, Miguel
 Tejedor Hernandez, Diego
 Mallen Perez, Miguel
 Alonso Karlezi, Alberto
 Reyes Leal, Gilbert
 Castillo Fernandez, Sergio
 Martinez Martinez, Antonio

<120> Method for detecting LDL receptor gene mutations associated with

<130> U 015859-4

<140> 10542937

<141> 2011-04-13

<150> ES200300206

<151> 2003-03-01

<160> 259

<210> 1

<211> 60000

<212> DNA

<213> homo sapiens

<220>

<221> gene

<223> rLDL

<220>

<221> gene

<223> n at position 35360 represents aau, aac or aat

<220>

<221> gene

<223> n at position 35361 represents aau, aac or aat

<400> 1

```

aaaagatggt gtatccattc aatggaacat tatttggcct ttaaaaggaa ggaaattctc 60
actgagcata gtggttttatg cctgtaatcc cagcactttg ggaggctgag gcagggggga 120
ggggggcggtt cacctgaggt caggagttca agaccagcct ggccaacatg gtgaaatccc 180
gtctctacta aaaatacaaa aaaattagcc gagtgtggtg gcacacacct gtaagccagg 240
ctacacggga gactgaggca ggagaatcgc tggaaacccg gaggcagagg ctgcagagag 300
ccgagattgc gtcactgcac tccagcctgg gtgacagagc gagactcttg tcttaaaaaa 360
aaaaagaagg aaggaaggaa ggaaggaagg aagtcttgac acaggctcca acacagatgt 420
tatgctcagt gaaataagcc agacatgaaa ggacaaatac tgcctgatct cattcataag 480
aggtcacctag aattgtagaa tgggtgtgtgc cacgggctgg gagggggtgt ggccagagtt 540
tcagtttggg aagttgagaa tgttctggag atggatggcg gtagtggtgg ttgcacaact 600
gtgtgaatgc gcttaatgcc tctgaattgt gcagttacaa gtggttcgga tgggccgggc 660
gcggtggctc atgctgttaa tcccagcact ttgggaggcc gaggcaggtg gatcatgaga 720
tcaggagatc gagaccatcc tggctaacac ggtgaaaccc catctctact aaaaaataca 780

```

aaaaattagc	caggcatggt	ggtgggcacc	tgtagtccca	gctacttggg	aggcggaggc	840
aggagaatgg	cgtgaacacg	ggaggcagaa	cttgcaagtga	gccgagatca	cgccactgca	900
ctccagcctg	ggcgacagag	tgagactccg	tctaaaaaaa	aaaaagtggt	taagatgggc	960
cgggcatggg	ggatcacgct	tgcaatccca	acactttggg	aggctgaggt	gggtgattac	1020
gaggtcagga	gttcgagacc	agcctgacca	ccatggtgaa	accccgctct	tactaaaagt	1080
acaaaattag	ccgggtgtcg	tggcacacgt	ctgtaatccc	agctactggg	gaggctgagt	1140
tgggaggatc	acctgagccc	agggagggtcc	aggctgcagc	aagccatgat	tgcaccactg	1200
cactccagcc	tgggtgagag	agtgagaccc	tgtctccaaa	caaacacaca	tgaaaaacag	1260
atTTTTTTTg	ccagggtgcag	tggctcacac	ctgtaatccc	agcacttttg	gaggccaagg	1320
cgggtggatc	acgagggtcag	gtgactgaga	gcacctgggc	taacacgggtg	aaaccctggc	1380
tctactaaaa	atacaaaaat	ttagccgagc	atggtgggtg	gcacctgtag	tcccagctac	1440
tcgggagggt	gaggcaggag	aatggcatga	acctgggagg	cggagcttgc	agtgagctga	1500
gatcacgcca	ctgcactcta	gcctggggga	cacagcaaaa	ctgtctcaaa	aaaaaaaaaa	1560
aagggttttt	taatttaaaa	aggaaagaaa	aggagagtgc	tctgtgtggc	ggcacctagc	1620
cctgtccagc	gcaccctgag	acagggatga	tgtctcctcc	ttgacctaa	accacaagtt	1680
ctaaccaatt	caaccgagga	cagagcccca	attccaggca	gggcaatggg	gtcgcttgt	1740
gaactaagat	gcagatggag	aagagcagac	acagacacag	gtcttggggc	ccctgcaggg	1800
gtttctcact	ggctttttcc	ccctggattc	ctatgggttc	tggggaacag	agttaggtcg	1860
gctggcaaga	cagatgcatg	aggctgtggc	gcccttgaca	ttgagccgga	gggccagagt	1920
tctgcatctg	tgacgcagag	aagctgggag	ccaaggttag	ccagatggtt	tggaggagtt	1980
ttaaacaatc	ttttcttttc	tttctctttc	catctgtctg	tccttctttc	ctcccttctc	2040
gccccctttc	ttttctcctt	tctttccttc	ctctctcctt	cctccctttt	tttctttttt	2100
tttggttttc	tttttgtatt	agtattatta	ttttttagac	agggtcttgc	tctgttgccc	2160
aggctggagg	gcagtggcac	gatcacagct	cagtacaccc	tcaaccttct	gggttcaagc	2220
aatcctcctg	ccttggcctc	ccaggtagct	gggaactacag	gcgtgtgcca	ccacacctgg	2280
ttaatttttt	ttttttttga	gacggagtct	tgctctgtca	cccaggctgc	agtgcagtgg	2340
cgtgatctcg	gtcactgca	acctccacct	cccggttca	agcgatcctc	ctgcctcagc	2400
ctcccagta	gctgggatta	cacgcgcccg	ccaccaagcc	cggctaattt	ttttattttt	2460
agtagagaca	gagtttcacc	acgttggcca	ggctcgtctc	aaactcctga	cttagtgatc	2520
taccacctt	ggcctctcaa	agtgtctggga	ttagaggcgt	gagccaccat	gcgcagccaa	2580
tttttgtatt	tttagtagag	atgggggttc	accatgttgg	tcagtctggg	ctcgaactcc	2640
tgacctcaag	tgatccacct	gcctcagcct	cccaaagtgc	tgggaattaca	ggcatgagcc	2700
accgcgccca	gccctcttaa	ccatttttaa	gtgcacagtt	cagcagcatt	aagcacattc	2760
acattgttgt	gcaaccatca	gcccccgctc	atctccagct	ttctcttttt	ttttgtttgt	2820
tttgagacag	ggtcttactc	tctcgcccag	tatagagtgc	agtgggtgcg	tcttggctcg	2880
ctgcaacctc	tgccttccag	gttcaagcta	ttctcctgcc	tcagtctccc	cagtagctgg	2940
gattacagac	acacatcacc	acgcctgct	aattattttg	catttttagt	agagatgggtg	3000
tttcaccata	ttggccaggc	tgatcttgaa	ctcctggcct	caagtgggtc	gctccaaact	3060
gctgagatta	cagccgtgag	ccactgtctc	cagccatctg	cacctttctc	atcttcccaa	3120
atgtaactat	gtccccgtga	aacactcact	ccccattcca	cctccccage	ccctggcacc	3180
ccccatttta	ttctggtgct	aggggaattt	caaaccaggc	aagtctcaac	acatgctcga	3240
gtgtaagaac	cagcccacag	cctcgttccc	taatcacggg	caaaccagaa	ttctactcca	3300
ggttctactc	tgtgaatctg	ctttctgtga	atctgttact	ctggggaccg	cctataagtt	3360
gaatcctaca	gtgtctccac	ttcagtgact	ggcttatttc	acttttctcc	tctttattta	3420
tgagacaaaa	tttcgctctt	gttgcctcag	ctggaatgca	atggcgtgat	ctcggcta	3480
ttttttgtat	ttttagtaga	ggcgggggtt	caccatgttg	gccaggctgg	tctcgaactc	3540
ctgacctcag	acgatccact	ttggccttcc	aaagtgtctg	gattacaggc	gcggcccacc	3600
tttctcctct	taatcacaca	ggtaatccat	acatacgaca	ttcttttttt	tttttgacac	3660
ggagtcttac	tctgtcacct	aggttgaggt	gcagtggcgc	aatcttggct	cactgcaacc	3720
tctgcctccc	aggatcaagc	aattctcctg	cctcagcctc	ctgagtagct	gggattacag	3780
gtaaccatca	ccacacctgg	ctaaattttg	tatttttagt	agagacgggg	tttcaccacg	3840
ttggccacgc	tgggtattgaa	ctcctggctt	caagtgatct	tcctgtctcg	gtctcccgaa	3900
gtgctgggat	tacaggaatg	agccactgtg	cccgcccaat	acgacatctg	tgcaatgaag	3960
tgcaacatat	aagacaccct	tccccacccc	actgccccca	ccaccgcccc	cacgccccca	4020
cccccatctc	cagatcagaa	cctggggctg	tgcaatttta	aacgttgtag	ccacttgeta	4080
cttgggtagt	tgaagttcag	tctcagccag	gttggagctc	tggactctgg	cccctctttt	4140
atTTTTTatt	tttatttttt	tttgagacag	agtctcgctc	tgtcgcccag	actggagcgc	4200

agtgggtgcga	tctcggtctca	ctgcaagctc	tgctctctga	gttcacgcca	ttcccccgcc	4260
tcagcctccc	gagcagctgg	gactacaggc	gcccgccacc	acaccggct	aatttcttgt	4320
atTTTTtagt	agagatggg	tttccacctg	ttagccagga	tggtctagat	ttcctgacct	4380
tatgatccgc	ctgcctcggg	cctcccaaag	tgctgggatg	acaggagtga	gccaccgcgc	4440
cgggcctctt	TTTTTTTTTT	tagacagtct	ctgtcaccga	ggctagagtg	cgatgggtgcg	4500
atctcggctc	actgcaacct	ccaccttccg	ggttcaagcg	attctcctgc	ctcagcctcc	4560
tgagtatctg	ggattacagg	tgctgtgac	cacgcccggc	tgatttttgt	atTTTTtagta	4620
gagacggggt	ttcaccacat	tggtcaggct	agcctcaaac	tcctgacccc	gtgatccttc	4680
cgcctcagcc	tcccaaagtg	ctgggattac	aggactctgg	cccatcttgg	ctgctgccaa	4740
tgtccttcct	tctatcttgg	TTTTTccaca	gttacgcaca	tgccagataa	cggcgagtct	4800
gttccccagc	aactgcaacg	gatctgccca	ccactgggaa	atggaagacc	ttgcagccca	4860
ggctctttgta	gaccaagatt	agatttgtgg	caacaaacac	ctgaccttgg	cctttggaac	4920
catcagccat	gtcagctaaa	ataaaagcag	aatctggctg	ggcgcagtgg	ctcacgcctg	4980
taatcccgagc	actttggggg	gctgaggtgg	gcagaccacc	tgaggtccgg	cgttctagac	5040
cagcctgacc	aatatgatga	aaccccgctc	ctactaaaca	tacaaaaatt	agctgggcat	5100
gggtggcgggc	acctgtaatc	ccagctactc	gggaggtga	ggaaggagaa	ttgcttgaac	5160
cctggaggca	gagggttgag	tgagccgaga	ttgcgccact	gcactccaac	ctggactgca	5220
gaacaagact	ctgtcccaaa	agcagataaa	taaaaataaa	taaaaataaa	aatatggccg	5280
ggcatggtgg	ctcacacctg	taatcccaac	actgggaaga	tgaggcgggc	agatcacgag	5340
gtcagggtat	cgagaccagc	ctggccaaca	tggtgaaacc	ccgtctctac	taaaaataca	5400
aaaattagcc	gggcatgatg	ctgcatgcct	gtaatcccag	ctactctgga	ggctgaggca	5460
ggagaatcgc	ttcatcccgg	gaggtggagc	ttgcagttag	ctgagatcgc	gccactgcac	5520
tctagcctgg	gcaaaagagt	gagactccat	cgcaagaaaa	aaaaaaaaaa	aagctgcaag	5580
ctctgtctcc	cgggttcaag	tgatttctct	gcctcagcct	tccaagtagc	taggattata	5640
cgcgcccgcc	accatgcctg	gctaattttt	gtatttttag	tagagatgcg	gtttcaccat	5700
gttggccagg	ctggtctcaa	actcctgacc	tcacgtgatc	cacctgcctc	ggcctcccag	5760
agtgtctggga	ttacagggtg	gaacccctgc	gcctggccaa	gaaaagttgc	ttgaatgaag	5820
agtaaataga	agaccagaa	agaaatgatt	cgcccgagga	aggtcacaga	agcaacgtaa	5880
tcaagatgga	aatctgactc	ttcctaattt	tggccagact	tcccatccct	ccaaagcttt	5940
ccagactctt	ccagatcatt	ctagatattt	ccagaaatca	ttcgtgaaat	ctaactagga	6000
gtagtctgta	aacaatgtgt	ttcacacaga	tacaattcat	aaacgatgag	aagacaagga	6060
cacttcatga	atgaaatttt	tacggccggg	tatgttggct	cacgcctata	atcccaggac	6120
tttggaagac	ccaggcagga	ggattgcttg	agtcaggag	ttcaagacca	gtctgggcca	6180
catagtgaga	ccctgtcgct	acaaaaaatt	taaaaattag	gtagatatgg	tggtgtatgc	6240
ctctagtttt	agcttttttg	gaggctgaag	caggaggatc	tcttgagccc	aggaggttga	6300
gctgcaatga	gctacgattg	aactactaca	ctccagtctg	ggtgacagag	aaagaggctg	6360
cctcaaaaaa	ataaaaaataa	aaaaataagg	ccggacgcgg	tggctcacgc	ctgtaatccc	6420
agcacttttg	gaggctgggg	tgggcagacc	acgaggtcag	gagatcgagg	ccatcctggc	6480
caacatgatg	aaaccctgtc	tctactgaaa	acacaaaaat	tagctgggcg	tggtggcgta	6540
tacctgtaat	cccagctact	cgggaggctg	aggcaggaga	atcacttgaa	ccagggagtc	6600
agaggttgca	gcgagaggag	attgtgccac	tgcatccag	cctggcaaca	gagcaagact	6660
ccgtctcaaa	aaagaaacaa	caacagcaac	aacaacaaaa	aaaacataaa	aaagttcggg	6720
cacggtggct	cacacctgta	atcccagcac	tttgggaggc	caaggtgggt	agatctcttg	6780
aggtcaggag	ttcaagacca	gcctggccaa	caaacatggg	gaaaccccg	ctctactaaa	6840
aatacaaaaa	gtagccgggt	gtagtcccag	ctactcggaa	ggctgaggca	ggagaatcgc	6900
ttcaacctgg	gagatggaag	ttgcagtga	ctgagattgc	gccactgggt	gacagagtaa	6960
gactcttgtc	tcaaaaaaaa	aaaaagaaag	aaagtttaat	ttaatgattc	aaataatgac	7020
ctgctcgaga	gataaatata	aagtctaacg	taagagggtg	atactttttc	ctctgtcctg	7080
ctgtcctcgc	cccacctcac	cccaagtccc	aacctgattg	atcagtctcc	tttccctctg	7140
gtagccccac	tcccatgacc	gaaccgagaa	gtcatgcacc	cgcataagaa	ctctaatttt	7200
TTTTTTcaaa	gtcttctcac	tgccccaaaa	atagtttctt	tcattcccag	gggatgtgaa	7260
agtgtctctc	ccaattttat	ttcaacctcc	cagcgttcca	cacatatgcc	ttgcctcagc	7320
cagctttcac	tgatctgcca	tttccacctc	ggcgctgctc	ctacctgcgg	aaatcctgtc	7380
catccatagt	ctgattttctg	ttgttccaga	acattctttt	TTTTTTcccc	tggaacattc	7440
TTtaagatac	ctcaataaat	gaaaccagag	ggtatagagc	agtatgaatg	ggtactacaa	7500
tgtacagggg	gaaatggagg	ggaatatgat	atactctcct	ccttgatat	gcttagaatg	7560
ttctagaagg	atatgcttaa	aaggtagca	gtcctggcca	ggcgtggtgg	ctcacgcctg	7620

taatctcagc	actttgggat	gccaacgcgg	acggatcaca	aggtcaggag	ttctagatca	7680
gcctgaccaa	tatagtga	cctcatcttt	actaaaaata	caaaaattag	ccgggtacgg	7740
tggcatgtgc	ctgtagtccc	agctactttg	gaacctgagg	caggagaatc	gcttgaactc	7800
gggaggcaga	ggttgcagtg	agccgagact	gtgccattgc	actgcagcct	gggtgacaga	7860
acaggactcc	gtctcaaaaa	aaaacaaaaa	aggtcagcag	tcttaattgt	cagagggcag	7920
gggacctgca	tgggatggag	gtttttccat	gtgtccacct	tttgagccct	tttgcttttt	7980
ttttttaaat	ctttttattg	tagcaaaata	gatataaaat	ttacctttt	tttttttgag	8040
acagggtctc	actctgttgc	ccaggttgga	gtgcagtggc	atgatcttgg	ctcactgcag	8100
cctctgcctc	ctgggttcaa	gcgattttcc	tgctcagcc	tcccagtag	ctgggattac	8160
aggtgcttgc	caccataccc	ggctaatttt	gtatttttag	tagagacggg	gttacgccaa	8820
gttggccaag	ctggtcgcaa	actcctgacc	tcaagtgate	cgccccctc	ggcctcccaa	8280
agtgtctgga	ttacaggcag	gagccaccac	gtcagccct	aaaatttacc	atattaacca	8340
ttttcaagtt	cagaggcatt	aaagtatact	cacattgttg	ttcaactgtc	accactactc	8400
acctgcagaa	gtttttcatc	ttgcaaagtg	aaaaccccat	acccaatttc	ccgttcttcc	8460
tctcagcccc	tggtaatcac	tattctactt	tttgtctact	ttttgtatga	atttgccctat	8520
tctaggacct	aatagaagtg	gagtcaaacc	tgtttgtcct	tttgtggetg	gcttatttca	8580
cccggcctta	tatcctcaag	gtttatccat	gttggaggat	gcctgaattt	ccttgttttt	8640
aaggctaaat	tttattctat	tatattaata	tgtcatattt	tgtttatcct	gatggacact	8700
tgggttgatt	ccacctttgg	ccattttgaa	gaagcttcta	tgtacatggg	atacacatat	8760
atctttgggt	ctctgctttc	aatgcttttg	gggatatttc	agatgtggaa	tttctggatt	8820
ataaggcaat	tttttttttt	gagacagact	ctcgctcttg	tcgcccaggc	tagaatgtgg	8880
tgggtgtgatc	tatttttttt	ttttttttga	gatggagtct	cgctctgtcg	cccaggctgg	8940
agtgcagtgt	cacgatctca	gctcactgca	agctccgect	cccaggttcg	tgccattctt	9000
atgectcagc	ctcccaagta	gctgggacca	cagccgceca	ccacctcacc	cggctaattt	9060
ttgtattttt	agtagagaca	gggtttcact	atgttggcca	ggatggtctc	gatctcctga	9120
cctcgtgatc	cgctgcctc	ggcctcccaa	agtgtcggga	ttacaggcgt	gagccactgc	9180
accgggctgg	tgtgatcttg	gctcgctgca	acctctgcct	cccaggttca	agcgattctt	9240
gtgcctcagc	ctctccgcag	ctgggactac	aggtgtgcgc	cactgtgccc	agctactttt	9300
taaaaatata	tgtgtattta	ttatactttt	aaagtctggg	atacatgtac	agaacgtgca	9360
ggtttggttac	ataggtatac	atgtgccatg	gtggtttgct	gcacccatca	accggtcatc	9420
tacattaggt	atttctccta	atgctatccc	ttccctagcc	ctccactctc	ccggtttttt	9480
gttttggttt	gttttggttg	tttgttttta	gtagagacag	ggtctcacca	tgttgcccag	9540
gctagtcttg	aactcctgac	ctcaagtgat	ccgcccacct	cagcctccca	aagtgtctgg	9600
attacagggtg	tgaccacta	cactcggcct	tattttcact	tatttatgca	attttcacta	9660
ttgctatatt	ctaggaggca	ctgtggaatt	gcactgtgga	attttagtat	tgctgtattt	9720
cagcaagcca	tgaggctctgt	cagcacacgg	ctttgggcat	tttgtgaaga	taactgatgc	9780
cagctgagcc	aaggcagggt	cctgattcca	cccactggca	ggcaccgagg	tctctgctgt	9840
tactgatggg	ttctctgtgg	attgatgggc	ttaaggccag	accacagctg	caatggctca	9900
cctctgccaa	aggccaggct	cgttggggca	gagacctatt	ccggactgag	cctcctggtg	9960
aattagagag	gtagaaaatg	ggaggacggg	ggcagggtgg	ctattacagc	gaggaaaatg	10020
cccacctga	gttgtattag	ataacttttg	gagttcagga	actttccaat	aaagtgggtt	10080
ccacagcagg	attacttact	gactccctaa	tagaaaagaag	gcaggcacag	gccgggcgtg	10140
ttggctcatg	tctgtaatcc	cagcacgttg	ggaggtgag	gcgggtggat	cacaaggcca	10200
ggagatccag	accatcctgg	ctaacaaagt	gaaaccccg	ctctactaaa	aatacaaaaa	10260
attaggctgg	gcgtggtggc	tcgctgcctgt	aatcccagca	ctttgggagg	ctgaggcggg	10320
cggatcacga	ggtcaggaga	tcgagaccgt	cctggctaac	acggtaaaac	cccactctca	10380
ctaaacatac	aaaaaaaaat	tagccagggtg	tgggtggcgg	cgctgtagt	cccagctact	10440
caggaggctg	aggcaggaga	gtggtgtgaa	ctcgggaggc	gcagcttgca	gtgagccgag	10500
actgcgccac	tgcactccag	cctgggcaac	agacagagac	tccgtctcaa	aaaaaaaaaa	10560
aaaaaataca	aaaaattagc	caggcgtggg	ggcacgtgca	cgtgactgta	gtcccagcta	10620
cttgggaggc	tgaggcagga	gaattgtttg	aacccgggag	acggaggttg	cagtgcgccc	10680
agatcgcgcc	actgcactcc	agcctgggtg	acagagctag	actccgtcaa	aaaacaaaaa	10740
acaaaaaaca	aaaaaacaaa	aaaaaaaaaa	cagcaggaac	tggcagggtct	tcctgaaga	10800
gataaaaaaa	aaaaaatgca	gttgcaacac	aaaagcagcc	acagagaaaa	gcaaaccat	10860
atatggtatt	tattatgcac	cgagtgtggc	tctaactcact	tttttttttt	taattgagag	10920
acagcctggc	tctgttgatt	gggctggagt	gcagtggcgc	gaccgtagct	cattgcagcc	10980
tcaacctcct	tggctcaagc	aatcctccta	cctcagcctc	ctgagttagct	gggaccacag	11040

gtgtgagcca	ccacgcctgg	ctaattgttt	tttttttttt	tgtagagaca	gggtctcact	11100
atgtggccca	ggctggtttc	caactcctgg	gtcaagtga	tctcccacc	tctgcctccc	11160
aaagtgctgg	ggattacagg	catgagccac	ctcgctggc	ctctagtcgc	tttatatatt	11220
ttaacttaat	ccttacaaga	gccctgtgag	ctagttacag	gagcacaat	ggaaaccaag	11280
aaacagaaaa	atztatcagc	atgactcagt	cctcagagcc	atgtatggcc	gtgtccgtgc	11340
atggcaggca	ggtcaggggc	ctggggaacg	ctgttctgga	aaccttggcc	aggccttggc	11400
acccgaggaa	tgtgcttttc	agagtttttg	tggctctttt	ccagacctgc	cctgacctct	11460
agctctggga	actatgtaag	ccaagtgcct	tccgggaagg	gagtccctct	cctggtaact	11520
ctttctgggt	aaccagatgt	ggactcatga	cacacactga	gcctacgtct	tataattttt	11580
tgtttttgtt	tttgagacag	tttcggtctt	cttgcccagg	ctggagtgca	atgggtgcgat	11640
ctcggtcac	tgaacctct	gcctcccagg	ttcaagcgat	tctcctgcct	cagcctccct	11700
agtagctgga	attgcaggca	tgcgccacca	cgctggcta	attttttgta	tttttttttt	11760
tttagtagaa	acgggggtttc	accttgtag	ccaggtgggt	caccaactcc	tgacctcagg	11820
tgatccgccc	acctctgcct	cccaaagtgc	tgggattaca	ggtgtgagac	agctgtgagc	11880
caccacgccc	ggcgcatttt	ttttttcttt	tttttcagag	ggagtgtccc	tctgtcacc	11940
aggctgaagt	gtagtggcgt	gatctcgcc	cactgtaacc	tctatctccc	aggttcaagt	12000
gattctcctg	actcagcctc	ccaagtagct	gggactacag	gcgcctgcta	ccatgcctgg	12060
ctaatttttg	tagttttagt	agaaaccggg	ttttgccatg	ttggccaggc	tggctctaaa	12120
ctcttgactt	caggtgatcc	acctgccttg	gccttctgaa	gtgctgggat	tatagggcatt	12180
gagccactgt	gactggccat	cttaaatttt	tttttttttt	tttttttttt	ttgagacagg	12240
gtttcactct	gtcgcccagg	ctggagtgca	aaggcgcgat	cttggttcac	tgcaagctcc	12300
gcctcctggg	ttcatgccat	tctcctgcct	ctgcctcatg	agtaactgag	actacaggcg	12360
cccaccacca	cgcgcggcta	atttttttgt	attttttttag	tagagatggg	gtttcacctt	12420
gttagccagg	atggtctcga	tctcctgacc	tcgtgatcca	cccgctctcg	cctcccaaaa	12480
tgctggcatt	acaggcgtga	gccaccgcac	ccagccttaa	attttttttt	aagggaatac	12540
aaaccacgtg	atattggggc	agtacagtgg	ctcacacctg	taattccacc	actttgggag	12600
gctgaggcag	gtgaatcacc	tgaggtcagg	agttcgagac	cagcccgcca	aacatggcga	12660
aaccccgctt	ctactaaaaa	taagaaaatt	agccgggctg	agtggcatgc	acctgtaatac	12720
tcagctactc	gggaagctga	ggcatgagaa	tcgcttgaa	ctgggagcag	gacgttgacg	12780
tgaaccgata	tcacaccact	gcactccagc	ctgggtgaca	gagcaagact	ctgtctcaaa	12840
aaaaaaaaaga	aaaaaaaaatc	cagtgatact	tactttttta	attttttatt	acttattttt	12900
tgttttaagt	tgaatcttta	aaacttatctt	tatttttgag	acacagtctc	actctgtcgc	12960
ccaggctgga	gtgcagtgggt	acaaccacag	ctcagtgcag	cgttgacctc	ctgggctcaa	13020
gccatcctcc	cgcctcagcc	tcccagtag	ctgggactac	aggcgcacac	aaccatgtcc	13080
agcttatttt	tgtatttttt	gtagagacag	ggccccactg	tgttgccctg	gcttgttctg	13140
aactcctagg	ctcaagtgat	ccccccgcct	caccctccca	aagtgtctggg	attacaggca	13200
tgagccacca	catccagact	tacttttttt	gtttaatgtc	gcaaatggca	taagggaatg	13260
gattcaatgg	ggacacattt	ataaacgttg	cagcagctcc	tagaacttgc	ctatccttgt	13320
aaacttctct	aggtgattgc	taattacttc	tttttttttt	tttttttttg	agacggagtc	13380
tcactctgtc	gccaggtctg	gagtacagtg	gcgcaatctc	gtctcactgc	aaactccacc	13440
tccggggttc	acgccattct	cctgcctcag	cctcccagat	agctgggact	acaggcaccc	13500
gccaccacgc	ccggctaatt	ttttgtattt	tttttttagta	gaggtgggggt	ttcactgtgt	13560
tatccaggat	ggtcttgatc	tctgacctc	gtgatccacc	tgctcagcc	tcccaaagtg	13620
ctgggattac	aggcgtgagc	caccatgccc	agcccgctaa	ttatttcaat	ttgaccttga	13680
cactgagcct	gccaagtagg	ttcaagcatt	ttgatggccc	ctttacagggt	tgggaaagct	13740
aatttatctg	tccaaggccg	aattctgaaa	ctgagctctta	actgccaaaa	attcttatca	13800
tcaatttctt	cttctggggt	gggcacagtg	gtcatgcct	gtaaagccag	caatttgaga	13860
ggcatcatga	tgaagagga	agaggattga	gtgaagctag	gagtttggga	ccagcctggg	13920
caacatagtg	agaccccatc	tataaaaaaa	aattaaaaat	tagttgggca	tgggtggtgca	13980
ctctgtgggt	cctagctatt	caggaggctg	aggtgggagg	attccttgag	cccagggttg	14040
acgtgcaga	gagctgtgat	cacgccactg	cagtccagcc	tgagtgacag	ctggaaataa	14100
tgataaataa	ataataaata	attatttaaa	aaattataat	aaaaataatt	aaaaaattat	14160
tttccctgat	taatcttttt	ttttgtcctt	ctgagagttc	aatttgtccc	ttttctgcct	14220
ggtctcctag	gtttccctaa	aatcctgctg	ag			